REMARKS

This Response is submitted in response to the Final Office Action mailed September 24, 2008.

Claims 1-18, 28, 32, 34-36, and 39-41 are pending in the Application. Reconsideration of the pending claims is respectfully requested in view of the following remarks.

I. Summary of Office Action

The objection to claims 32 and 34 has been withdrawn in view of Applicants' amendment filed August 27, 2008.

Claims 1-18 and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,922,708 issued to Sedlar ("Sedlar"), in view of U.S. Patent No. 7,275,063 issued to Horn ("Horn").

Claims 28 and 34-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,625,624 issued to Chen ("Chen"), in view of U.S. Patent No. 6,356,902 issued to Tan ("Tan").

Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen, in view of Tan, and further in view of Sedlar.

Claim 40 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sedlar, in view of Horn, and further in view of U.S. Patent No. 6,636,250 issued to Gasser et al. ("Gasser").

Claim 41 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Horn.

II. Claims Rejected Under 35 U.S.C. § 102

With respect to the § 102(e) rejections of independent Claim 41 over Horn, Applicants submit that Horn does not identically disclose either of the following features: "assigning unique identification numbers to directories of the storage server in a depth first search order during the file walk" or "traversing the stored indications based on the unique identification numbers to determine relationships between the directories of the storage server.

Horn discloses a system for automatically organizing, indexing, and viewing information from multiple sources. For each information object, Horn creates and stores an internal representation of the object in a database, along with an internal unique identifier for the object (col. 8, lines 1-12). Horn determines paths between the stored objects and displays hierarchies depicting these paths (col. 32, line 18 – col. 33, line 33).

However, Horn does not identically disclose assigning unique identification numbers in a depth first search order. Horn describes a thread that recursively descends a hierarchy and creates an array of data entries, each of which includes its depth in the folder hierarchy (col. 34, lines 37-40). Horn does not disclose how its hierarchy is recursively traversed, and in particular does not disclose that its hierarchy is recursively traversed "in a depth first search order." Simply recursively descending a hierarchy does not identically disclose using a depth first search order, which traverses down to the end of a hierarchy first, and then across the hierarchy. Nor is Horn's inclusion of the depth of a folder in a data entry the same as or equivalent to using a depth first search order.

In addition, Horn fails to identically disclose traversing the stored indications based on the unique identification numbers. The Examiner pointed to the same portion of Horn (col. 34, lines 29-65) as corresponding to both "the file walk," in which unique identification numbers are assigned to directories, and "traversing the stored indications," in which the stored unique identification numbers are subsequently used to determine relationships between directories. (Final Office Action, Sept. 24, 2008, pp. 4-5.) However, the same portion of Horn cannot correspond to both of these distinct features. Moreover, the cited portion of Horn describes traversing a hierarchy in order to create (i.e., store) an array of data entries, as described above. Horn fails to disclose traversing indications that are already stored, not to mention traversing stored indications "based on the unique identification numbers."

III. Claims Rejected Under 35 U.S.C. § 103

With respect to the § 103(a) rejections of independent Claims 1, 10, and 39 over Sedlar and Horn, Applicants submit that Sedlar and Horn do not teach or suggest, either individually or in combination, either of the following features: "using a first thread to assign a first unique identification (ID) number to a first determined directory and a second unique ID number to a second determined directory in the directory structure according to a depth first search (DFS) order " or "using a second thread to examine the determined files."

The Examiner acknowledges that Sedlar does not teach these recited features. (Final Office Action, Sept. 24, 2008, pp. 7-8.) The Examiner relied upon Horn to cure this deficiency. As described above, Horn discloses a system for automatically organizing, indexing, and viewing information from multiple sources. For each information object, Horn creates and stores an internal representation of the object in a database, along with an internal unique identifier for the object (col. 8, lines 1-12). Horn determines paths between the stored objects and displays hierarchies depicting these paths (col. 32, line 18 – col. 33, line 33).

However, Horn does not disclose or suggest assigning its unique identifiers according to a depth first search order. As discussed above, while Horn describes a thread that recursively descends a hierarchy, Horn does not disclose how its hierarchy is recursively traversed, and in particular does not disclose that its hierarchy is recursively traversed "in a depth first search order." Simply recursively descending a hierarchy does not identically disclose using a depth first search order, which traverses down to the end of a hierarchy first, and then across the hierarchy. Nor is Horn's inclusion of the depth of a folder in a data entry the same as or equivalent to using a depth first search order.

Nor does Horn disclose or suggest using a first thread to assign unique identification numbers and a second thread to examine determined files. In fact, Horn describes that a single thread – its scanner thread – performs the function the Examiner believes corresponds to assigning unique identifiers ("Traverse") and the functions the Examiner believes correspond to examining the determined files ("Annotate," "Create," "Classify," and "Notify") (col. 34, lines 34-65).

Independent Claims 1, 10, and 39 are allowable for at least the foregoing reasons.

With respect to the § 103(a) rejections of independent Claim 28 over Chen and Tan, Applicants submit that Chen and Tan do not teach or suggest, either individually or in combination, either "assigning a depth first search (DFS) ID to the first directory, wherein the directory numbers are assigned while the directory structure is being traversed in the DFS order" or "placing the first subset of files in a file queue for examination by a file thread."

Chen discloses a system for archiving and retrieving web pages. Chen describes that different threads, including a user thread, an agent thread, and a walking thread, may be used within its system (Fig. 2). Chen's agent thread requests a web page from a remote server and may provide the web page to its walking thread (col. 3, lines 54-60; Fig. 2). Chen's walking thread may walk through a document hierarchy and perform various functions on a web page, including archiving the web page, searching for keywords, and creating index tables (col. 3, line 59 – col. 6, line 4).

However, Chen does not disclose or suggest placing a subset of files in a queue for examination by a file thread. While Chen describes using different threads, none of these threads corresponds to "a file thread" that examines a subset of files in a file queue. While the Examiner believes that Chen's agent thread corresponds to Applicants' file thread, the functions the Examiner cites in support are performed by Chen's walking thread, not Chen's agent thread. Moreover, nowhere does Chen disclose "placing [a] subset of files in a file queue for examination" by a thread, whether by the agent thread or otherwise. Nor does Chen disclose "assigning a depth first search (DFS) ID to the first directory, wherein the directory numbers are assigned while the directory structure is being traversed in the DFS order." Indeed, the Examiner acknowledges that Chen fails to disclose this feature (Final Office Action, Sept. 24, 2008, p. 29).

Nor does Tan disclose either "assigning a depth first search (DFS) ID to the first directory, wherein the directory numbers are assigned while the directory structure is being traversed in the DFS order" or "placing the first subset of files in a file queue for examination by a file thread."

Tan discloses mapping a tree structure to a graph map composed of a single-link node. As part of this mapping process, tree nodes at a current level are stored in "Parent-stack memory" and nodes at the next level are stored in "Child-stack memory" (col. 5, lines 31-33).

However, Tan does not disclose assigning directory numbers in a depth first search order. At most, Tan assigns level numbers to nodes in the tree structure; several nodes may share the same level number (col. 5, lines 25-39; Fig. 2A; Fig. 7). Nowhere does Tan describe that these level numbers are assigned in a depth first search order. Only after the level numbers have been assigned and the tree structure has been mapped to a graph map composed of a single-link node, does Tan perform depth-first or breadth-first searches on the tree structure (col. 7, lines 22-59). Nor does Tan disclose "placing the first subset of files in a file queue for examination by a file thread." Indeed, the Examiner does not cite Tan as disclosing this feature.

Independent Claim 28 is allowable for at least the foregoing reasons.

IV. Conclusion

Thus, for at least the foregoing reasons, the independent claims and all claims that depend from them are believed to be patentable over the applied art.

Please charge any deficiencies or credit any overpayments to our Deposit Account No. 50-2207, under Order No. 672728062US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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